

I claim:

1. A open-face electrical connector comprising:
 - a housing, said housing having a chamber therein;
 - 5 a sealant located in said chamber;
 - a wire connector lug, said wire connector lug having an open jaw for lateral insertion of an electrical wire therein;
 - a cover;
 - a hinge, said hinge holding said cover in a spaced condition from said housing;
 - 10 said cover and said housing forming an enclosure so that when said cover is placed on said housing the sealant located in said housing is forced around the wire connector lug to form a sealant covered electrical junction in the wire connector lug.
2. The open-face electrical connector of claim 1 wherein the hinge comprises a living
15 hinge connecting said housing and said cover.
3. The open-face electrical connector of claim 1 wherein the wire connector lug has an I shape with an open jaw at each end.
- 20 4. The open-face electrical connector of claim 1 wherein the wire connector lug includes a threaded recess and a threaded member having a wire engaging end.
5. The open-face electrical connector of claim 1 wherein the cover and said housing
25 comprise electrically insulating material.
6. The open-face electrical connector of claim 1 wherein the wireconnector lug comprises an electrical conductor.

7. The open-face electrical connector of claim 1 wherein the wire connector lug has two open jaws for lateral wire insertion therein.

5 8. The open-face electrical connector of claim 1 wherein the housing and the cover comprise a polymer plastic.

9. The open-face electrical connector of claim 1 wherein the sealant comprises a viscous sealant that is retainable in the chamber of the housing.

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10. The open-face electrical connector of claim 9 wherein the sealant comprise silicone.

11. The open-face electrical connector of claim 1 wherein the sealant in said chamber comprises an amount sufficient to fill the chamber in the housing when the wire connector
15 lug is positioned in the chamber.

12. The open-face electrical connector of claim 1 wherein the wireconnector lug is frictionally held in the cover.

20 13. The open-face electrical connector of claim 1 wherein the housing includes a wire access opening on each side of the housing.

14. The open-face electrical connector of claim 1 wherein the housing includes a first latch member and the cover includes a second latch member that cooperatively hold the
25 cover in a closed condition.

15. The open-face electrical connector of claim 1 wherein one of the latch members comprises an elongated opening and the other latch member comprise a lip for insertion into the elongated opening.

- 5 16. An on-the-go sealable wire connector comprising:
a housing, said housing having a chamber therein;
a sealant located in said chamber;
a wire connection member, said wire connection member maintainable in a sealant free state when said housing is in an open condition and said wire connector connection member is in an unconnected condition, said wire connection member displaceable into the chamber;
a cover, said cover carrying said wire connection member, said cover and said housing forming an enclosure so that when said cover is placed on said housing the sealant located in the chamber flows around the wire connection member to form a sealant covered electrical junction in the wire connection member to thereby bring the wire connection member from a sealant free state to a sealant covered state.
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17. The on-the-go sealable wire connector of claim 16 wherein the cover is hingedly attached to said housing.

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18. The on-the-go sealable wire connector of claim 17 wherein the sealant is a viscous sealant.

19. The on-the-go sealable wire connector of claim 18 wherein the enclosure includes opening for extending electrical wires therethrough.

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20. The on-the-go sealable wire connector of claim 19 wherein the housing comprises an electrically insulating material.

21. The on-the-go sealable wire connector of claim 20 wherein the housing and the
5 cover include a latch for on-the-go securing the cover to the housing to thereby maintain the sealant therein from coming into contact with an external connector environment.

22. The on-the-go sealable wire connector of claim 21 wherein the wire connection
10 comprises a wire connector lug having a threaded member for rotatingly engagement with an electrical wire therein.

23. The on-the-go sealable wire connector of claim 22 wherein the wire connector lug has at least one open jaw for lateral insertion of an uncut electrical wire therein.

15 24. A wire connector comprising:
a housing, said housing having a chamber therein;
a cover for said housing, said cover having an inside surface and an outside surface;
a wire connector lug secured to said inside surface of said cover so that when said
wire connector lug is outside the chamber of said housing the wire connector lug is
20 accessible for forming an electrical connection thereto, said wire connector lug extending from said inside surface of said cover so that when said cover is placed on said housing the wire connector lug extends into the chamber in the housing to shield the electrical connection.

25 25. The wire connector of claim 24 wherein the chamber contains a sealant.

26. The wire connector of claim 25 wherein a volume of sealant in the chamber is sufficient so that positioning the wire connector lug in the chamber causes an encapsulation of the wire connector lug.

5 27. The wire connector of claim 26 wherein the cover is connected to said housing by a hinge.

28. The wire connector of claim 27 wherein a portion of the chamber is free of sealant.

10 29. The wire connector of claim 28 wherein a volume of the portion of the chamber that is free of sealant and a volume of the wire connector lug are such that forcing the wire connector lug into the volume of sealant causes the sealant to flow around the wire connector lug and encapsulate the electrical connection without the sealant being forced out of the housing.

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30. The wire connector of claim 29 wherein the wireconnector lug comprises an I-shaped connector with a set of jaws on each end.

31. The wire connector of claim 30 wherein atleast one of the set of jaws includes a
20 wire locator.

32. The wire connector of claim 31 wherein the cover includes a latch for securing said cover to said housing.

25 33. The wire connector of claim 32 wherein the hinge includes a bias to hold the cover in a laterally extended condition from the housing.

34. The wire connector of claim 33 wherein the housing includes a wire relief area to permit a wire to extend through a housing side wall.

35. The wire connector of claim 24 wherein said wire connectorlug includes at least one
5 J-shaped wire receiver.

36. The wire connector of claim 24 wherein said wire connector lug includes at least three wire receivers.

10 37. The wire connector of claim 24 wherein the wire connector lug includes a J-shaped wire receiver at opposite ends to permit joining an uncut wire thereto.

38. The wire connector of claim 24 wherein the wire connector lug includes a cylindrical shaped wire receiver.

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39. The wire connector of claim 24 wherein the housing contains a sealant and a film extends across the housing to retain the sealant in the housing.

40. The wire connector of claim 24 wherein the housing contains a set of knockouts to
20 provide a wire passage to the chamber in the housing.

41. The wire connector of claim 24 whereinthe housing and the cover comprises separate parts.

25 42. The method of forming a branch attachment to an electrical wire without having to cut the electrical wire comprising the steps of:

forming a first housing having a chamber therein;

placing a sealant in the first housing;
forming a second housing, said second housing having an electrical connection member thereon;

inserting an electrical wire into the electrical connection member; and
5 placing the first housing and the second housing in engagement to cause the sealant in the first housing to flow around an electrical junction in the electrical connection member.

43. The method of claim 42 including the step of securing the electrical connection member to one of the housings.

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44. The method of claim 42 wherein the step of placing a sealant in the first housing comprises placing a viscous sealant in the first housing.

45. The method of claim 42 including the step of placing sufficient sealant in the first
15 housing so that when the second housing is brought into engagement therein the sealant in the first housing is forced to flow around the wire connection member to form a waterproof electrical connection therein.

46. The method of claim 42 including the step of stripping a portion of an electrical wire
20 and inserting the stripped portion into the wire connection member.

47. The method of forming a branch attachment comprising the steps of:
forming a first housing having a chamber therein;
forming a second housing, said second housing having an electrical connection
25 member having a sealant therein;
inserting an electrical wire into the sealant in the electrical connection member; and

closing the first housing and the second housing around the electrical connection member.